

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

PUBLICATION NUMBER : 62134983  
PUBLICATION DATE : 18-06-87

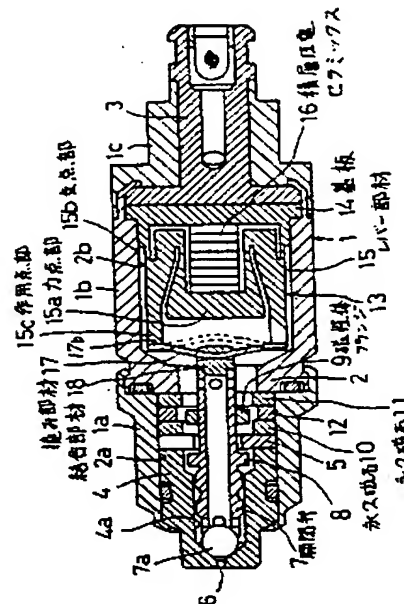
APPLICATION DATE : 07-12-85  
APPLICATION NUMBER : 60275646

APPLICANT : AISAN IND CO LTD;

INVENTOR : ITO SHOJI;

INT.CL. : H01L 41/08 F02M 51/06 H02N 2/00

TITLE : BISTABLE DISPLACEMENT AMPLIFIER



ABSTRACT : PURPOSE: To improve accuracy and response of a bistable displacement amplifier as an actuator of a fuel injection valve or the like having constant amplification ratio of a flexible member and excellent responsiveness by using laminated piezoelectric ceramics.

CONSTITUTION: When an electric field is not applied to a laminated piezoelectric ceramics 16, a flexible member 17 is deflected forward to hold a switching valve 7 in a closed position, while when the electric field is applied to a pulse, both operating points 15c of a lever 15 are abruptly extended outward, the member 17 is pulled at both ends 17b, inverted at the center as designated by a broken line in the drawing to move the valve 17 to an opened position. At this time, a rear permanent magnet 11 acts on a flange 9, and the valve 17 is held at the opened position in a stable state. When the electric field is again applied in a pulse shape, both the points 15c are abruptly extended outward, the member 17 is inverted at the center to move the valve 7 to the closed position.

COPYRIGHT: (C)1987,JPO&Japio